

CLAIMS

- 5 1. A apparatus for reducing output energy and bandwidth of an intermittent data stream through a digital filter, comprising:
- a digital filter, and
- a controller coupled to said digital filter and operable to calculate at least a first ramp data field in accordance with coefficients selected to minimize energy in a truncated tail of
- 10 the digital filter as a function of at least a first data field.
2. The apparatus of claim 1, and wherein said at least a first data field is adjacent to said ramp data field.
- 15 3. The apparatus of claim 1, and wherein said controller is further operable to window said ramp data field.
4. The apparatus of claim 1, and wherein said controller is further operable to calculate both of a ramp-up and a ramp-down ramp data field as a function of said at least
- 20 a first data field and a second data field respectively, and wherein ramp-down coefficients are the mirror image of said coefficients.
5. An apparatus for generating coefficients to reduce the output energy and bandwidth of an intermittent signal in a digital filter, comprising:

a controller operable to calculate the energy in at least a first truncated tail data field as a function of at least a first ramp data field and at least a first data field, and operable to take a partial derivative of the energy in said at least a first truncated tail data field with respect to said at least a first ramp data field, and operable to generate an equality by
5 setting said partial derivative equal to zero, and operable to solve said equality for said at least a first ramp data field as a function of said at least a first data field thereby generating at least a first coefficient.

6. The apparatus of claim 5, and wherein said energy in said at least a first
10 truncated tail data field is also a function of the digital filter tap coefficients.

7. A method of reducing output energy and bandwidth of an intermittent data stream through a digital filter, comprising the step of:

calculating at least a first ramp data field in accordance with coefficients selected to
15 minimize energy in a truncated tail of the digital filter as a function of at least a first data field.

8. The method of claim 7, and wherein said at least a first data field is adjacent to said ramp data field.
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9. The method of claim 7, further comprising the step of windowing said ramp data field.

10. The method of claim 7, and wherein said calculating step is applied to both of a
25 ramp-up and a ramp-down ramp data field as a function of said at least a first data field

and a second data field respectively, and wherein ramp-down coefficients are the mirror image of said coefficients.

11. A method generating coefficients for reducing the output energy and bandwidth
5 of an intermittent signal in a digital filter, comprising the steps of:

calculating the energy in at least a first truncated tail data field as a function of at least a first ramp data field variable and at least a first data field variable;

taking a partial derivative of the energy in said at least a first truncated tail data field with respect to said at least a first ramp data field variable;

- 10 writing an equality by setting said partial derivative equal to zero, and
solving said equality for said at least a first ramp data field variable as a function of said at least a first data field thereby generating at least a first coefficient.

12. The method of claim 11, and wherein said energy in said at least a first
15 truncated tail data field is also a function of the digital filter tap coefficients.